REMARKS

Claims 1, 3-7, 9-18, and 70-72 are pending, of which claims 1 and 72 are independent.

A minor clerical amendment has been made to claim 71 in response to the Examiner's objection. No new matter has been added.

35 U.S.C. § 103 Rejections

Claims 1, 3, 6, 7, 9-19, and 70-72 were rejected as being unpatentable over Riley (WO 01/08169) in view of Jin ("Superconducting properties..."). The Examiner acknowledges that Riley does not disclose a precursor solution that contains, among other features, "a dopant component comprising a dopant metal, wherein the dopant metal partially replaces the rare earth of the rare earth/alkaline earth metal/transition metal oxide in the precursor solution," but relies on Jin to provide this feature. We disagree with the Examiner's use of Jin and submit that one of ordinary skill in the art would not have thought to combine Jin's teachings with Riley's methods.

Jin appears to describe an investigation of the "[s]uperconducting properties of the $YBa_2Cu_3O_{7-\delta}$ compound with partial rare earth substitution" (Abstract). However, Jin concludes that partial substitution on rare earth sites does not lead to significant flux pinning enhancement, and suggests that substitution on other sites may lead to better results:

> The result of the present work with insignificant flux pinning enhancement by Y-site substitution suggests that future efforts should perhaps be concentrated on Ba-, Cu-, or O-site substitutions (p. 78, col. 2).

Jin warns readers that rare earth substitution is unable to generate meaningfully enhanced flux pinning behavior. We submit that given Jin's conclusions, one of ordinary skill in the art would not have considered using a dopant metal that partially replaces the rare earth, as Jin had already shown unsuccessful results.

In the most recent office action (p. 4), the Examiner makes the following statement:

> However, the remarks of the Office Action mailed 3/31/10 at pages 2-3 is incorporated herein by reference. It is reiterated that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Upsher-Smith Labs. v. Pamlab, LLC, 412 F.3d 1319, 1323, 75 USPQ2d 1213, 1215 (Fed. Cir. 2005). MPEP 2123 (I).

The Examiner's position is set forth in more detail in the office action issued March 31, 2010:

> However, it appears that Jin teaches that superconductors with the rare earth site partially substituted do have a higher Jc than that of a control Y-123 superconductor (Table II, page 78). Jin does not appear to teach away from chemical substitution even though the reference recites that "future efforts should be concentrated on Ba-, Cu, or O-site substitution." This recitation seems to point out that chemical substitution in merely a non-preferred embodiment. Jin does not teach that rare earth site substitution is disparaged as a bad result, only that other site substitutions may yield a better result. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. MPEP 2123 (I). To this point, "[a] known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." MPEP 2123 (I). In the instant case, amount of increase in the value of Jc (as a result of the rare earth element being substituted) described in Jin could be viewed by one of ordinary skill in the art as an improvement over the control Y-123

That is, the Examiner is of the opinion that Jin's description of partial rare earth substitution is merely a nonpreferred embodiment.

However, Jin describes a number of factors that may affect flux pinning:

> The possible error in the grain size measurement could be as much as 50%. Also, the ΔM values may be dependent on other factors in

> addition to the grain size, such as the connectivity of the grains, or the nature of the boundaries ... Different types of chemical substitution (e.g., on Ba-site), subtle changes in oxygen vacancy distribution, and other factors may also have some effect on flux pinning. *Considering all these possibilities, the observed improvement in ΔM and intragrain J_c by a factor of 2-3 in the present work may be viewed as relatively insignificant* (p. 78, col. 1, emphasis added).

That is, Jin concedes that many other factors in addition to rare earth substitution may be affecting the results. Indeed, it appears that Jin cannot even be certain that the observed changes in ΔM and J_c are due to partial rare earth substitution. Given this uncertainty, we submit that Jin's use of partial rare earth substitution is not simply a nonpreferred embodiment. Rather, Jin recommends avoidance of partial rare earth substitution because he is not even sure that it is the rare earth substitution that is causing the (insignificant) effects on ΔM and J_c.

Taken together, the uncertainty of the cause of Jin's results and the conclusion that those results represent an insignificant improvement mean that Jin teaches away from the use of partial rare earth substitution for those looking to obtain a flux pinning enhancement. Because Jin suggests that partial rare earth substitution is to be avoided, we submit that one of ordinary skill in the art would not have looked to Jin for combination with the methods described in Riley. That is, neither Riley nor Jin, alone or in any proper combination, describes or suggests a precursor solution including, among other components, "a dopant component comprising a dopant metal, wherein the dopant metal partially replaces the rare earth of the rare earth/alkaline earth metal/transition metal oxide in the precursor solution," as recited in independent claims 1 and 72.

We thus submit that claims 1 and 72 are patentable over Riley and Jin.

Claims 3, 6, 7, 9-19, and 70-71 depend from claim 1 and thus are patentable over Riley and Jin for at least the same reason claim 1 is patentable.

Dependent claims 4, 5, and 12-18 were rejected as being unpatentable over Riley in view of Jin and one or more of Weinstein (US 6,869,915), Wiesmann (US

2003/0050195), and Feenstra (US 5,972,847). These claims depend from claim 1. None of Weinstein, Wiesmann, or Feenstra remedies the deficiencies of Riley and Jin, as discussed above. Thus, claims 4, 5, and 12-18 are patentable for at least the same reasons claim 1 is patentable.

Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply any other charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 30020-301001.

Respectfully submitted,

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